

REMARKSI. The 35 U.S.C. §103 Rejections

Claims 1-6 and 9-21 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,950,157, issued to Heck ("HECK") in view of U.S. Patent No. 6,411,930, issued to Burges ("BURGES"). Applicant respectfully traverses the rejections.

A. Claim 1

It is axiomatic that the combination of cited references in a §103 rejection must disclose every element in the rejected claim. Claim 1 recites:

A method for training a computer-implemented classification system to be able to identify a handset used over a communication network, comprising:

- (a) transforming training data for a plurality of handset types into a composite dataset including training feature vectors;
- (b) configuring a plurality of classifiers based on said composite dataset, including:
  - (1) associating one of said classifiers with one of said handset types not previously associated with any other of said classifiers;
  - (2) training said classifier of (1) to recognize, within said composite dataset, (A) a first class of training feature vectors related to said associated handset type, and (B) a second class of training feature vectors related to other handset types;
  - (3) repeating (1) and (2) for at least another of said classifiers; and
- (c) storing a result of (b) in a computer-readable memory so as to be usable to (i) correlate an unidentified handset's test feature vectors against said trained classifiers, (ii) select one of said classifiers exhibiting the greatest correlation, and (iii) determine said handset type associated with said selected classifier.

The Examiner acknowledged that HECK fails to teach training feature vectors for identifying handsets. The Examiner cited BURGESS for allegedly disclosing this limitation. Based on the arguments presented below, Applicant respectfully submits that neither HECK nor BURGESS (nor a combination of these references) discloses or suggests the training feature vectors for identifying handsets as recited in claim 1.

1. BURGESS Does Not Disclose or Suggest Transforming Training Data for a Plurality of Handset Types into a Composite Dataset Including Training Feature Vectors

Element (a) of claim 1 recites transforming training data for a plurality of handset types into a composite dataset including training feature vectors. Examiner cited BURGESS as allegedly disclosing this step.

BURGESS discloses “methods and apparatus for use in performing speaker identification.” BURGESS, col. 1, lines 13-14. In contrast, claim 1 recites a method for training a system to perform handset identification.

In BURGESS, a Gaussian mixture model and support vector machines are used together to identify speakers. BURGESS, col. 7, lines 19-24. Support vector machines are known binary classifiers that may be adapted to perform different types of pattern recognition. BURGESS, col. 1, lines 55-67. Speaker recognition is one type of pattern recognition. In order to successfully adapt support vector machines to perform speaker recognition, one has to provide a way to discern human voice data variations to determine specific feature vector representations of such data variations. This is what BURGESS has accomplished.

In contrast, claim 1 recites a different type of pattern recognition than speaker recognition. Specifically, element (a) of claim 1 recites the step of transforming training data for a plurality of handset types into a composite dataset including training feature vectors. Claim 1 recites a technique to adapt handset training data to determine specific feature vector representations of such data. Handset training data present substantially different data variations than human voice data. For example, and without limitation, handset training data include machine generated noise, electronic interference, silence data, etc. Thus, applicant respectfully submits that, like HECK, BURGESS also does not disclose the step of transforming training data for

a plurality of handset types into a composite dataset including training feature vectors as recited in claim 1.

## 2. Improper “Obvious to Try” Rationale

An improper “obvious to try” rationale should not be applied in support of an obviousness rejection. MPEP 2145.X.B. An obvious to try rationale is improper “where the prior art gave either no indication of which parameters were critical ... or where the prior art gave only general guidance as to the particular form of the claimed invention or how to achieve it.” *Id.*

BURGES does not provide any indication about which parameters are critical to achieve the claimed invention (e.g., how to process handset specific data to adapt support vector machines to perform handset identification). BURGES merely provides general guidance about using support vector machines to achieve one type of pattern recognition (i.e., speaker identification). However, BURGES does not teach or suggest how to transform handset specific data to be usable by support vector machines for performing handset identification. Based on the foregoing, Applicant respectfully submits that the Examiner relied on an improper obvious to try rationale by citing BURGES to support an obviousness rejection against claim 1.

## 3. Impermissible Hindsight

Improper hindsight reasoning should not be applied in support of an obviousness rejection. MPEP 2145.X.A. Hindsight reasoning is proper if it only takes into account knowledge which was within the level of ordinary skill in the art at the time the claimed invention was made but not knowledge gleaned from applicant’s disclosure. *Id.*

The Examiner has failed to point out where in the cited prior art the suggestion or teaching of the claimed invention (i.e., handset identification) may be found. The Examiner relied instead on the conclusory statement that “it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention as taught by HECK [in view of BURGES].” Applicant respectfully submits that the Examiner applied improper hindsight reasoning in support of the obviousness rejection. If the Examiner believes that he had relied on proper

hindsight, the Examiner is requested to provide an Affidavit so stating in accordance with 37 CFR 1.104(d)(2) and MPEP 2144.03.

4. Conclusion

Based on the foregoing, neither HECK nor BURGES (nor a combination of these references) discloses or suggests a method for training a system to be able to identify a handset as recited by claim 1. Therefore, claim 1 should be in condition for allowance.

B. Claims 2-3

Claims 2-3 are dependent upon independent claim 1. Based on the foregoing arguments with respect to independent claim 1, these dependent claims should also be in condition for allowance.

C. Claim 4

Corresponding elements of independent claim 4 recite similar limitations (i.e., a plurality of classifiers, each of which has been trained to recognize a handset type by differentiating between a plurality of feature vectors ..., said feature vectors having been derived by transforming audio training data obtained therefrom into a multi-dimensional domain) as discussed above with respect to claim 1. Based on the foregoing arguments for claim 1, Applicant respectfully submits that HECK and BURGES do not render claim 4 unpatentable and this claim is also in condition for allowance.

D. Claims 5-8

Claims 5-8 are dependent upon independent claim 4. Based on the foregoing arguments with respect to independent claim 4, these dependent claims should also be in condition for allowance.

E. Claim 9

Corresponding elements of independent claim 9 recite similar limitations (i.e., a composite database, including training feature vectors obtained by transforming training data ...; a plurality of classifiers ...each classifier configured to recognize, within said composite database, a first class of training feature vectors ... and a second class of training feature vectors...) as discussed above with respect to claim 1. Based on the foregoing arguments for claim 1, Applicant respectfully submits that HECK and BURGESS do not render claim 9 unpatentable and this claim is also in condition for allowance.

F. Claim 10

Claim 10 recites a method for identifying a handset, comprising at least the step of training each of a plurality of support vector machines to identify, respectively at least one of a plurality of handset types.

Based on the foregoing arguments for claim 1, Applicant respectfully submits that HECK and BURGESS do not render claim 10 unpatentable and this claim is also in condition for allowance.

G. Claims 11-12

Claims 11-12 are dependent upon independent claim 10. Based on the foregoing arguments with respect to independent claim 10, these dependent claims should also be in condition for allowance.

H. Claim 13

Corresponding elements of independent claim 13 recite similar limitations (i.e., a plurality of support vector machines trained to identify at least one of a plurality of handset types) as discussed above with respect to claim 10. Based on the foregoing with respect to claims 1 and 10, Applicant respectfully submits that HECK and BURGESS do not render claim 13 unpatentable and this claim is also in condition for allowance.

I. Claim 14

Corresponding elements of independent claim 14 recite similar limitations (i.e., transform training data into a composite dataset including training feature vectors in a multi-dimensional domain; configure a plurality of classifiers based on the composite dataset) as discussed above with respect to claim 1. Based on the foregoing arguments for claim 1, Applicant respectfully submits that HECK and BURGESS do not render claim 14 unpatentable and this claim is also in condition for allowance.

J. Claim 15

Corresponding elements of independent claim 15 recite similar limitations (i.e., access a plurality of classifiers, each of which has been trained to recognize a handset type by differentiating between feature vectors, said feature vectors ... having been derived by transforming audio training data obtained therefrom into a multi-dimensional domain) as discussed above with respect to claim 1. Based on the foregoing arguments for claim 1, Applicant respectfully submits that HECK and BURGESS do not render claim 15 unpatentable and this claim is also in condition for allowance.

K. Claim 16

Corresponding elements of independent claim 16 recite similar limitations (i.e., training each of a plurality of support vector machines) as discussed above with respect to claim 10. Based on the foregoing with respect to claims 1 and 10, Applicant respectfully submits that HECK and BURGESS do not render claim 16 unpatentable and this claim is also in condition for allowance.

L. Claim 17

Corresponding elements of independent claim 17 recite similar limitations (i.e., transforming training data into a composite dataset including training feature vectors in a multi-dimensional domain; configuring a plurality of classifiers based on

the composite dataset) as discussed above with respect to claim 1. Based on the foregoing arguments for claim 1, Applicant respectfully submits that HECK and BURGES do not render claim 17 unpatentable and this claim is also in condition for allowance.

M. Claim 18

Corresponding elements of independent claim 18 recite similar limitations as discussed above with respect to claim 1. Based on the foregoing arguments for claim 1, Applicant respectfully submits that HECK and BURGES do not render claim 18 unpatentable and this claim is also in condition for allowance.

N. Claim 19

Corresponding elements of independent claim 19 recite similar limitations as discussed above with respect to claim 1. Based on the foregoing arguments for claim 1, Applicant respectfully submits that HECK and BURGES do not render claim 19 unpatentable and this claim is also in condition for allowance.

O. Claim 20

Corresponding elements of independent claim 20 recite similar limitations as discussed above with respect to claim 10. Based on the foregoing with respect to claims 1 and 10, Applicant respectfully submits that HECK and BURGES do not render claim 20 unpatentable and this claim is also in condition for allowance.

P. Claim 21

Claim 21 recites a system for identifying a handset, comprising at least a plurality of classifier means trained to identify at least one of a plurality of handset types.


Based on the foregoing arguments for claim 1, Applicant respectfully submits that HECK and BURGES do not render claim 21 unpatentable and this claim is also in condition for allowance.

II. Conclusion

In view of the foregoing, it is respectfully submitted that the application is now in condition for allowance. Should the Examiner believe that a telephone interview would help advance the prosecution of this case, the Examiner is requested to contact the undersigned attorney.

Respectfully submitted,

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